PIH14

ECONOMIC BURDEN OF COMMUNITY ACQUIRED PNEUMONIA IN OLDER ADULTS IN THE NEW EU COUNTRIES OF THE CENTRAL EUROPE

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OBJECTIVES: Older adults are in an increased risk of respiratory infections including community acquired pneumonia (CAP). The former socialistic countries of the central Europe form a unique region with specific health care and epidemiology characteristics, and where the local evidence on the underlying epidemiology is scarce. The objective was to estimate the economic burden of CAP in adults ≥50 years of age in the Czech Republic (CR), Slovakia (SK), Poland (PL), and Hungary (HU) using data from 2010. **METHODS:** The incidence of hospitalized CAP stratified by age groups 50-64, 65-74, 75-84 and ≥85 was obtained from national surveillance systems (PL, CR, SK) and insurance records (HU). The estimates of non-hospitalised CAP incidence was based on retrospective chart reviews (CZ, SK, PL) and the insurance fund records (HU). Direct costs from the payer's perspective were based on resource use analyses (CR, SK), DRG lists (PL) and the insurance records (HU). **RESULTS:** The incidence of hospitalized CAP per 100,000 person years was: 456.6 (CR), 504.6 (SK), 363.9 (PL), and 845.3 (HU). Compared with adults 50-64 years of age, the incidence of hospitalised CAP were 2.3 fold higher in those 65-74, 5.2 fold higher in 75-84 and 10.8 fold higher in those ≥85, manifesting an exponential trend. While the majority of CAP among adults 50-64 years of age was treated outpatient, the proportion of CAP hospitalized increased with increasing age. The total burden of CAP in adults over 50 was € 12,579,543 (CR); 9,160,774 (SK); 22,409,085 (PL); and 18,298,449 (HU); with hospitalization representing over 90% of the direct costs of treatment in all 4 countries. Adults ≥65, who represent 41% of the combined population, account for 73% of the costs. **CONCLUSIONS:** The incidence and likelihood of hospitalisation drives the costs of CAP upwards with increasing age in the new central EU countries.

PIH15

APPLICATION OF PROBABILISTIC LINKAGE: COMPARE HEALTH CARE COSTS AMONG MENOPAUSAL WOMEN WITH DIFFERENT SYMPTOMS BY LINKING WOMEN'S REGISTRY AND CLAIMS DATABASE

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OBJECTIVES: Menopause symptoms are a good disease severity proxy for menopausal women, but are not available in claims database. We applied probabilistic linkage to add symptoms recorded in a registry database to claims data, and compare the healthcare costs among women with various symptoms. **METHODS:** Women age 45 or older who used estrogen only hormone therapy (HT) were selected from a large US claims database (41/2005-09/30/2008). Another group who used estrogen only HT with a menopause diagnosis was selected from the University of Michigan Women's Registry Database. Logistic regression was used to calculate the propensity score for each patient controlling for osteoporosis, gynecological disorders/procedures, genital infection, bladder/pelvic floor support problem, gynecology system cancer, breast condition, gut condition, hormone disorder, nerve problem, and other individual comorbidities such as rheumatoid disease, depression, and blood clotting. Patients with the closest propensity score from each group were matched, and menopause symptoms for registry patients were added to the claims database records. After repeating probabilistic linkage 250 times, the mean and 95% confidence interval (CI) of healthcare costs during the follow-up period were calculated. **RESULTS:** 80 patients from each population were matched after probabilistically linking 20,020 claims database patients with 83 registry database patients. The average cost of patients with at least one symptom was much higher than for patients without symptoms ($13,570 [95% CI: $13,459-$13,680] vs. $3,391 [95%CI: $3,345-$3,436], p-value<0.001). Cost differences were mainly from inpatient, physician visit, and pharmacy costs. Among patients with menopause symptoms, those with hot flashes had the highest costs ($10,127), followed by memory loss ($1,653), vaginal dryness ($864), reduced libido ($568), and mood swings ($358). **CONCLUSIONS:** Women with menopause symptoms incur higher health care costs than those without This study suggests symptoms are important determinants of health care expenses and their impact can be assessed by linking registry and claims databases.

PIH16

COST-EFFECTIVENESS OF A NEW FIXED-DOSE COMBINATION OF DUTASTERIDE AND TAMSULOSIN FOR THE TREATMENT OF SYMPTOMATIC BENIGN PROSTATIC HYPERPLASIA IN QUEBEC, CANADA

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OBJECTIVES: To evaluate the long-term cost-effectiveness of a fixed-dose combination (FDC) therapy (0.5mg dutasteride and 0.4mg tamsulosin daily) compared to 0.4mg tamsulosin monotherapy for the treatment of symptomatic benign prostatic hyperplasia (BPH). **METHODS:** We developed a Markov state transition model with tunnel state and embedded decision tree. The model follows a Quebec cohort of 312,448 male patients aged ≥50 years, diagnosed with BPH and with symptoms as defined by an International Prostate Symptom Score ≥12. This cohort reflects the population of the 4-year ComBAT trial to evaluate the effect of combination therapy versus either dutasteride or tamsulosin monotherapy on BPH clinical progression and improvement in BPH symptoms. We conduct this analysis from the perspective of the Quebec provincial healthcare system, considering all primary care and hospital costs. Utility estimates were obtained from published literature. Results are presented at 10 years and lifetime (up to 25 years) in the form of incremental costs, incremental QALYs and the incremental cost-effectiveness ratio (ICER). Sensitivity analyses were performed to evaluate the robustness of the model to variations in the underlying input parameters. **RESULTS:** Discounted QALYs per patient at a 10-year time horizon were 6.88 (FDC) and 6.82 (Tamsulosin). At 10 years the ICER for FDC compared with Tamsulosin was CAD $29,860. The ICER decreased over time to reach CAD $29,239 over a lifetime horizon. At a willingness to pay of CAD $50,000 per QALY gained, the probability of FDC being cost-effective for the symptomatic BPH population was approximately 63%. **CONCLUSIONS:** FDC can be cost-effective in treating patients affected with enlarged prostate with moderate or severe symptoms. The sensitivity analyses suggested that variation in main parameters will not alter the behavior of the comparison between the two treatments (i.e. FDC is always more effective and more costly than tamsulosin at a lifetime time horizon).

PIH17

COST-EFFECTIVENESS ANALYSIS OF ANTI-PNEUMOCOCCAL VACCINATION IN HIGH RISK AND ADULT PATIENTS IN ECUADOR

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OBJECTIVES: Despite the Ecuadorian policy of vaccination for high risk persons and adults over 50 years age with 23-valent pneumococcal polysaccharide vaccine (PPSV23), *Streptococcus pneumonia* infections continue to be the most common disease, causing approximately 3,158 deaths every year and raising public health costs. A 13 valent pneumococcal conjugate vaccine (PCV13) has recently been approved for use in adults, and is expected to have an additional impact on disease burden due to covered serotypes. The purpose of this study was to compare PPSV23 and PCV13 vaccines from an Ecuadorian public perspective. **METHODS:** A cost-effectiveness analysis based on a Markov model was developed comparing the impact and cost-effectiveness of PPSV23 and PCV13 for the prevention of pneumococcal disease in high risk adult population. Time horizon of the model was 35 years, with annual discounting of 5% per annum. The effectiveness measure was the number of cases avoided and cost differences between the interventions. Resource use and costs were obtained from Ministry of Health published data, INEC, and SIREVA reports. Costs were collected from local healthcare databases. **RESULTS:** The model reveals that PCV13 is a cost-saving alternative compared to PPSV23. Vaccination with PCV13 is estimated to prevent an additional 1443 cases of bacteremia; 162 cases of meningitis; 11,236 cases of inpatient pneumonia; 1,241 cases of outpatient pneumonia and 3413 deaths due disease compared to PPSV23. Furthermore, vaccination with PCV13 is estimated to save thousands: 25,329 USD in medical costs, 3,874 USD in non medical costs and 46.027 USD in medical+ non medical+vaccination costs. **CONCLUSIONS:** In Ecuador, a national policy of vaccination with PCV13 is expected to be a cost-saving strategy in the prevention of pneumococcal disease in high risk patients and adults over 50 years compared to PPSV23. PPV13 is expected to generate reduction on mortality and morbidity with lower expected costs.

PIH18

REGIONAL COST-EFFECTIVENESS ANALYSIS OF UNIVERSAL CHILDHOOD HEPATITIS A VACCINATION IN BRAZIL

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OBJECTIVES: To conduct a cost-effectiveness analysis of a universal childhood hepatitis A vaccination program in Brazilian regions with different hepatitis A endemicity. **METHODS:** An age and time-dependent dynamic model was developed to estimate the incidence of hepatitis A for 24 years. The analysis was run separately, according to the pattern of regional endemicity, one for Southern + Southeast (low endemicity) and one for the North + Northeast + Midwest (intermediate endemicity). The decision analysis model compared universal childhood vaccination with current program of vaccinating high risk individuals. Epidemiologic and cost estimates were based on data retrieved from a nationwide seroepidemiological survey for viral hepatitis, primary data collection, National Health Information Systems and literature. The analysis was conducted from the healthcare system and societal perspectives. Costs are expressed in 2008 Brazilian reals. **RESULTS:** In this model a universal national immunization program would have a significant impact on disease epidemiology in all regions, resulting in 64% reduction in the number of cases of icteric hepatitis, 59% reduction in deaths due to disease and a 62 % decrease of life years lost, in a national perspective. With a vaccine price per dose of R$16.89 (US$7.23), vaccination against hepatitis A was a cost-saving strategy in the low and intermediate endemicity regions and in Brazil as a whole from healthcare and society perspective. Results were most sensitive to icteric hepatitis incidence, ambulatory cases and vaccine costs. **CONCLUSIONS:** Universal childhood vaccination program against hepatitis A could be a cost-saving strategy in all regions of Brazil. These results may be useful for the Brazilian government for vaccine related decisions and for monitoring population impact if the vaccine is included in the National Immunization Program.

PIH19

IMPACT OF INSURANCE COVERAGE FOR IN VITRO FERTILIZATION ON THE COST PER LIVE BIRTH IN THE US

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